

PRELIMINARY RESULTS

**Taller de Identificación de Prioridades de
Conservación del**

Delta del Río Colorado

Mapping Conservation Priorities

Tijuana, B.C. Mexico. October 14-17, 2002



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The Conservation Priorities Workshop for the Colorado River Delta is a product of an organizing committee that includes:

Centro de Investigación en Alimentación y Desarrollo, Environmental Defense, Pronatura Sonora, Sonoran Institute, University of Arizona, and World Wildlife Fund

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This report provides a summary of the activities and preliminary results from **Mapping Conservation Priorities in the Colorado River Delta: a state-of-knowledge workshop**, held in October 2002. The overall goal was to synthesize existing information on biophysical resources, and to engage experts in an analysis of these resources and relationships. Resulting products will help guide the development of conservation goals over the next two decades in the delta.

This bi-national workshop was attended by 35 Mexican and US scientists and local residents and 20 representatives from water users, state and federal governments, and

non-governmental organizations. Collectively the participants represented over 400 years of delta experience. A corps of 10 talented and enthusiastic support staff operated the GIS stations, took notes, and made this very complicated exercise work without a hitch.

The workshop focused on the terrestrial and marine portions of the delta in Mexico. Participants had the opportunity to form multi-disciplinary teams and discuss the biophysical characteristics and ecological relationships of the four defined ecological zones in the Delta. Based on this, they defined conservation priority areas, their threats and opportunities for conservation and restoration.



INTRODUCTION

The greatest desert river in the Western Hemisphere, the Colorado, has been severely altered by 65 years of vigorous water management to satisfy agriculture, industrial and urban needs in the US and Mexico. As a consequence, extensive wetland, riparian, and coastal ecosystems are degraded and the river's terminus in Mexico has shrunk to 10% of its original size. At the same time, unsustainable fishing practices and lax enforcement in the Upper Gulf of California, widely recognized as one of the richest subtropical inland seas in the world, have severely depleted populations of fish, invertebrates, and marine mammals, and disrupted ecological processes in the coastal marine zone.

Despite a general deterioration in ecosystem health, the delta and Upper Gulf remain worthy of conservation attention. Recent flood pulses, associated with El Nino conditions, re-established significant native riparian plant communities. Agriculture return flows have nurtured over 12,000 hectares of wetlands in the San Luis and Mexicali valleys. Surveys demonstrate that the delta contains significantly more native trees and wetlands than does the

lower basin of the Colorado River in the United States and serves as a refuge for species that are threatened and endangered elsewhere in the watershed.

The collective value of these related terrestrial, riparian, intertidal and coastal habitats has been recognized in several ways. Ten years ago, the Mexican government afforded initial protection by designating 934,700 hectares as the Biosphere Reserve of the Colorado River Delta and the Upper Gulf of California. Two ecological priority-setting exercises have recognized the delta and the Upper Gulf as sites of special importance for conservation at the regional scale.

This holds special promise for the delta, suggesting that relatively modest flows of freshwater and appropriately managed brackish water could significantly stimulate ecological recovery. In addition, improved fishery management policies and alternative fishing practices are taking hold in the Upper Gulf. Nevertheless, the Colorado River and delta continue to be classified as one of North America's ten most endangered rivers.



Presentation by Richard Cudney of results from the coastal and marine zone group.

While much remains to be learned about the ecology of the delta and Upper Gulf, considerable information has been collected but not fully assimilated into planning for conservation. In the past five years, five major symposia or meetings have been held on the Colorado River Delta (San Luis Rio Colorado 1998; Mexicali 1999, Riverside 2000, Washington 2000, Mexicali 2001).

Though all were important to advancing broader awareness and stimulating strategies for its restoration, none responded to a basic requirement of sound conservation planning.

This workshop was designed to provide an opportunity for scientists to work with the most recent literature, most of which has been published in the last five years, as well as a great deal more data that has been gathered but is not yet in print.

In bringing together 55 Mexican and American experts and local resource users to compile and analyze published biological and ecological data and compare and assimilate unpublished information, this workshop set a scientific foundation for “mapping the possible.” The general goal of the workshop was to identify a network of priority conservation sites that, with proper management, would ensure the long-term persistence of the delta and Upper Gulf’s biodiversity, including rare and common species, native vegetation communities, and the ecological processes needed to maintain these elements of biodiversity. Specifically, the workshop’s objective was to develop the following products:

WORKSHOP PRODUCTS

1. A map of conservation priorities within the Colorado River delta
2. An ecological assessment, including risk and restoration potential, of special interest areas within each of the identified delta ecological zones
3. A hydrologic assessment of the quantity, quality, and timing of water flows required to support each of the identified ecological zones and that acknowledges local flood control needs
4. A state-of-knowledge and gap analysis identifying priority research needs and resources required to implement them



The analysis and discussion from the different working sessions provided information to develop these products. While a full report is being developed, the objective of this document is to present some of the preliminary results.

The following maps show the priority sites for conservation, threatened areas and areas with special opportunities that were identified during the workshop. It is important to highlight that much more information was collected in association with these maps, but still requires additional processing and will be published in the final workshop proceedings.

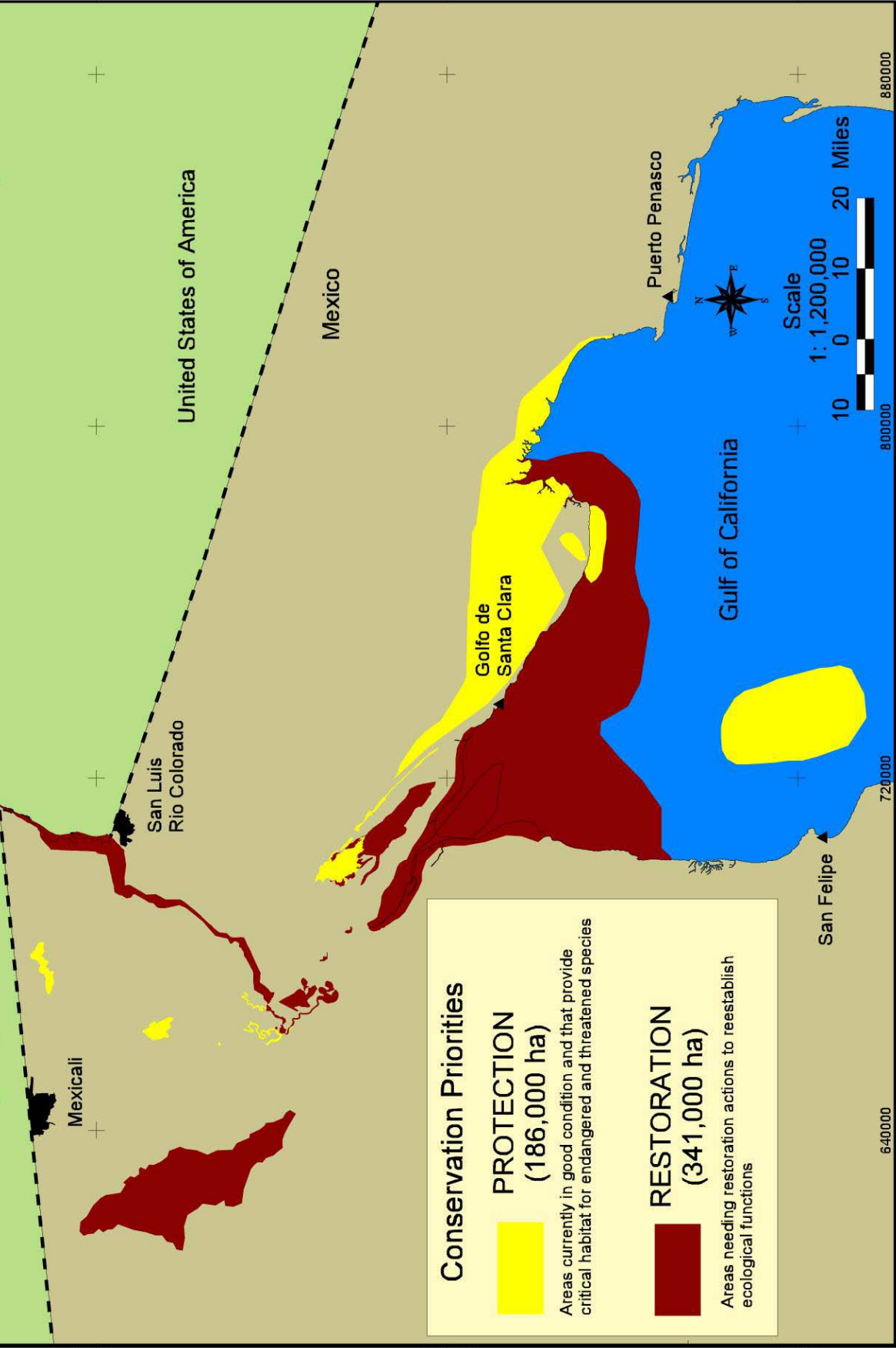


Workshop participants analyzing ecological relationships for the Colorado River Riparian Corridor zone

PRIORITY AREAS FOR CONSERVATION

PRELIMINARY RESULTS

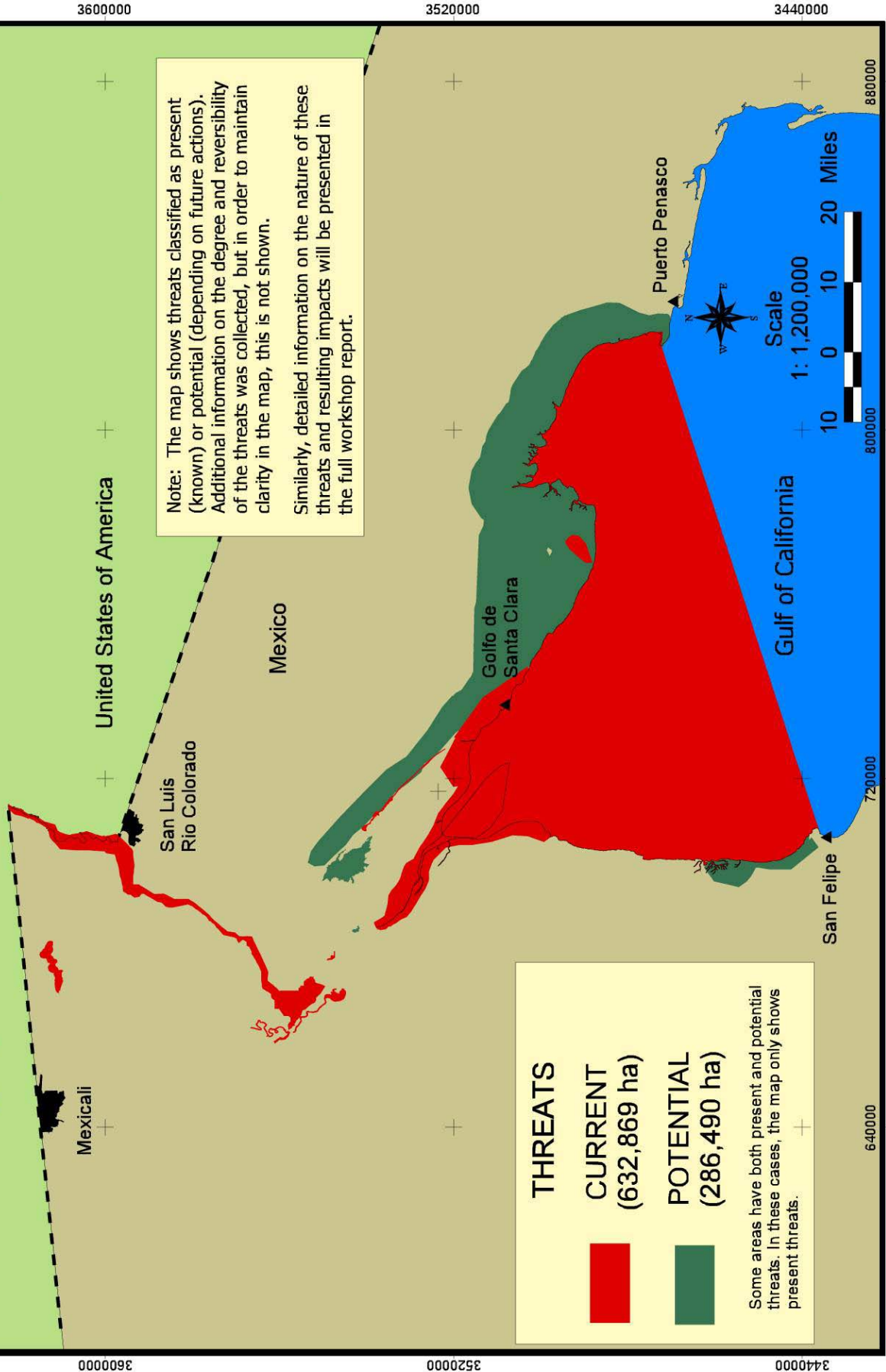
Mapping Conservation Priorities in the Colorado River Delta Workshop



AREAS MOST THREATENED

PRELIMINARY RESULTS

Mapping Conservation Priorities in the Colorado River Delta Workshop



Note: The map shows threats classified as present (known) or potential (depending on future actions). Additional information on the degree and reversibility of the threats was collected, but in order to maintain clarity in the map, this is not shown. Similarly, detailed information on the nature of these threats and resulting impacts will be presented in the full workshop report.

THREATS

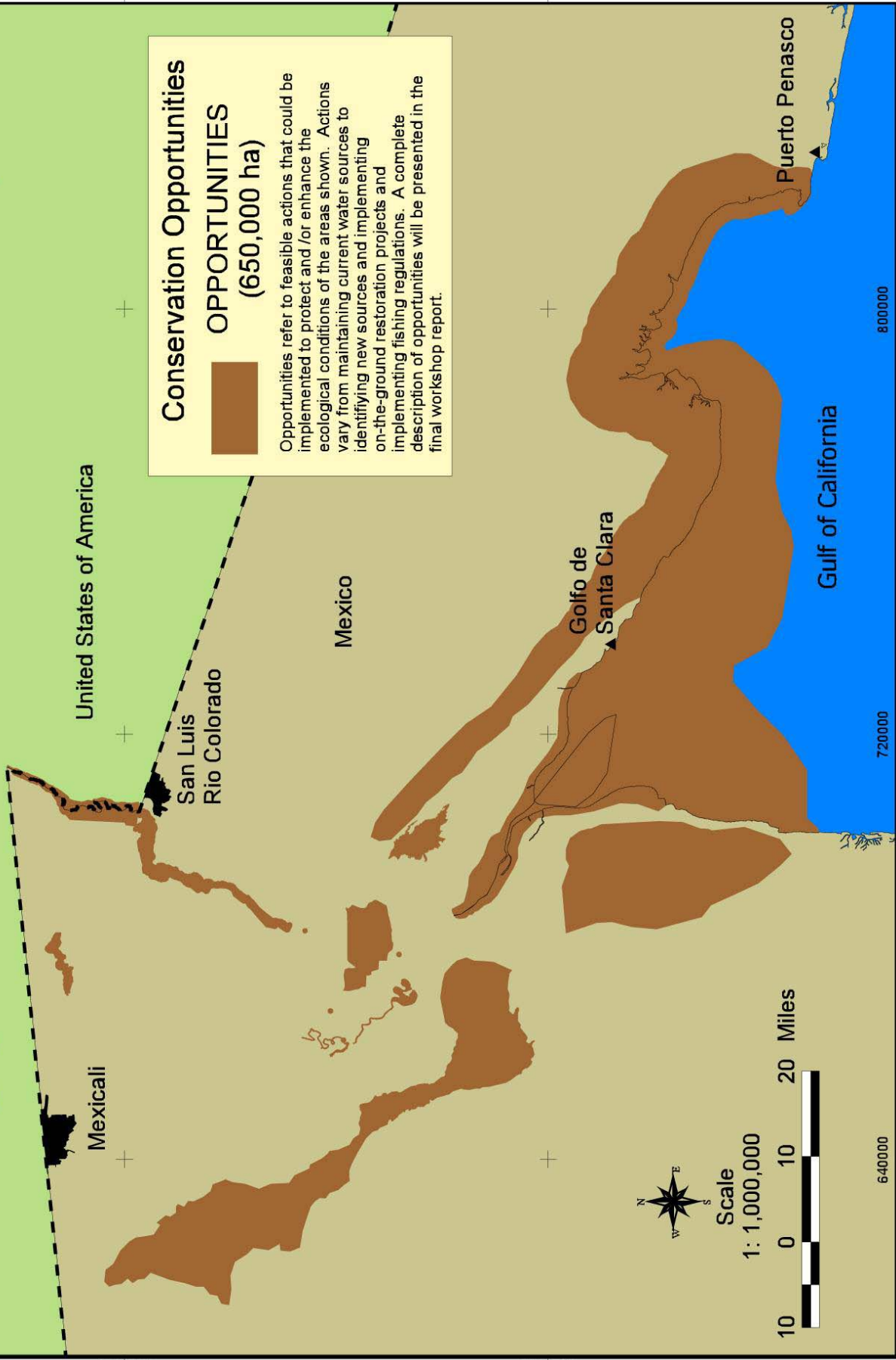
- CURRENT**
(632,869 ha)
- POTENTIAL**
(286,490 ha)

Some areas have both present and potential threats. In these cases, the map only shows present threats.

AREAS WITH SPECIAL CONSERVATION OPPORTUNITIES

PRELIMINARY RESULTS

Mapping Conservation Priorities in the Colorado River Delta Workshop



Research Priorities

During the workshop, observers and experts identified research priorities in the Colorado River Delta and Upper Gulf of California. The following priorities received the most votes:

1. Implement a comprehensive resource inventory and monitoring program
2. Develop a comprehensive surface and ground water model using an interdisciplinary and team approach
3. Identify all sectoral water demands in the delta (municipal, agricultural, industrial, environmental)
4. Determine the effects of shrimping restrictions on the marine ecosystem
5. Integrate natural resources and socio-economic research, and policy analysis into a master plan for the entire delta region

PROCESS

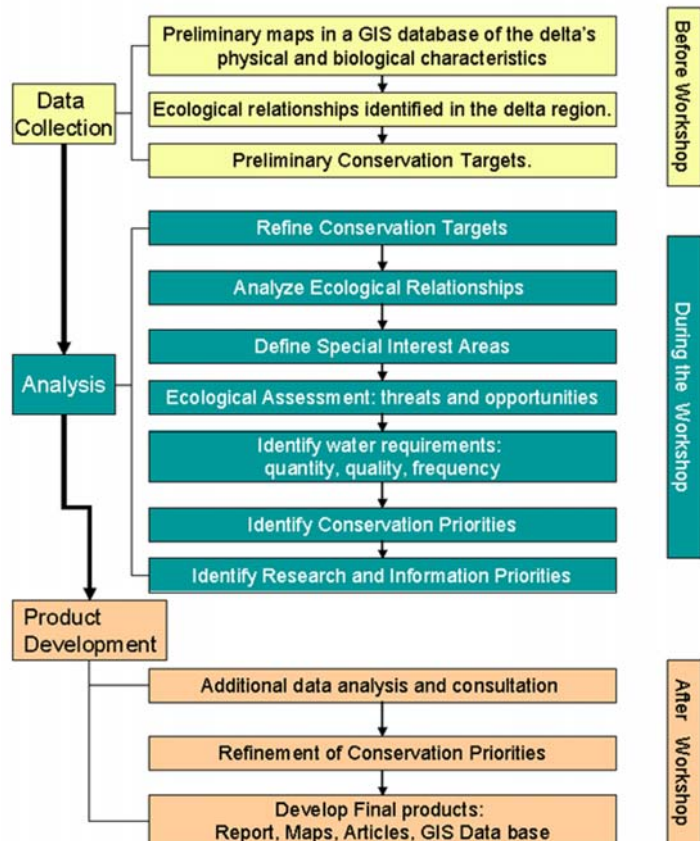
The process for mapping conservation priorities was designed to develop geographical and biological resource map coverages for the delta region. It engaged experts in an analysis of these resources and ecological relationships.

The creation of resource maps took place before the workshop, whereas the biophysical analysis and identification of priority areas in the delta was the theme of the workshop. Participants grouped by expertise first identified those biological, physical, or combination of biotic and abiotic features that represent the biodiversity of the region or conservation targets.

The process was also designed to encourage interaction among participants. Working in interdisciplinary groups for most of the workshop allowed participants to identify special interest areas by analyzing ecological interactions among biological and physical features of the delta from an interdisciplinary perspective.

This interdisciplinary perspective also was used to identify threats to these areas and their conservation opportunities.

Mapping Conservation Priorities Process Colorado River Delta



FINAL PRODUCTS

Beyond this preliminary report, workshop organizers will use the results to finalize a set of products that define conservation priorities in the Colorado River Delta. Specific products will include:

- An updated Geographic Information System (GIS) database of the Colorado River Delta accessible to scientists and other interested parties
- Bilingual workshop proceedings including a map of conservation priority areas in the delta, with significant annotation regarding threats, opportunities for restoration, and water needs, as well as a complete bibliography and priority research needs
- An interactive version of the proceedings, displayed on the University of Arizona website for the Colorado River Delta: www.ag.arizona.edu/colorado_river_delta.

NEXT STEPS

The results from the workshop represent a biological foundation that could help other organizations and institutions to develop and implement their efforts in the delta. It is our commitment to make the results widely available and to encourage others to use them.

The organizing committee is also committed to continue working in the delta, along with other organizations, to integrate biological and socio-economic information to develop a comprehensive conservation plan for the delta, and to work with stakeholders to protect and restore it.

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http://www.ag.arizona.edu/colorado_river_delta